DEPARTMENT OF THE AIR FORCE
59TH MEDICAL WING (AETC)
JOINT BASE SAN ANTONIO - LACKLAND TEXAS

15 MAR 2017

MEMORANDUM FOR 959 CSPS/44M1
ATTN: CAPT MICHAEL GONZALES

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled **Incidence of Pulmonary Disease in Inflammatory Bowel Disease** presented at/published to **National ACP, San Diego, CA, 30 March -1 April 2017** in accordance with MDWI 41-108, has been approved and assigned local file #**17133.**

2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.

3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are a 59 MDW staff member, we can forward your request for funds to the designated Wing POC at the Chief Scientist's Office, Ms. Alice Houy, office phone: 210-292-8029; email address: alice.houy.civ@mail.mil.

4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

Linda Steel-Goodwin

LINDA STEEL-GOODWIN, Col, USAF, BSC
Director, Clinical Investigations & Research Support

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

INSTRUCTIONS

USE ONLY THE MOST CURRENT 59 MDW FORM 3039 LOCATED ON AF E-PUBLISHING

1. The author must complete page two of this form:
   a. In Section 2, add the funding source for your study [e.g., 59 MDW CRD Graduate Health Sciences Education (GHSE) (SG5 O&M); SG5 R&D; Tri-Service Nursing Research Program (TSNRP); Defense Medical Research & Development Program (DMRDP); NIH; Congressionally Directed Medical Research Program (CDMRP) ; Grants; etc.]

   b. In Section 2, there may be funding available for journal costs, if your department is not paying for figures, tables or photographs for your publication. Please state "YES" or "NO" in Section 2 of the form, if you need publication funding support.

2. Print your name, rank/grade, sign and date the form in the author's signature block or use an electronic signature.

3. Attach a copy of the 59 MDW IRB or IACUC approval letter for the research related study. If this is a technical publication/presentation, state the type (e.g. case report, QA/QI study, program evaluation study, informational report/briefing, etc.) in the "Protocol Title" box.

4. Attach a copy of your abstract, paper, poster and other supporting documentation.

5. Save and forward, via email, the processing form and all supporting documentation to your unit commander, program director or immediate supervisor for review/approval.

6. On page 2, have either your unit commander, program director or immediate supervisor:
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7. Submit your completed form and all supporting documentation to the CRD for processing (59crdpubspres@us.af.mil). **This should be accomplished no later than 30 days before final clearance is required to publish/present your materials.** If you have any questions or concerns, please contact the 59 CRD/Publications and Presentations Section at 292-7141 for assistance.

8. The 59 CRD/Publications and Presentations Section will route the request form to clinical investigations, 502 ISG/JAC (Ethics Review) and Public Affairs (59 MDW/PA) for review and then forward you a final letter of approval or disapproval.

9. Once your manuscript, poster or presentation has been approved for a one-time public release, you may proceed with your publication or presentation submission activities, as stated on this form. **Note:** For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.

10. If your manuscript is accepted for scientific publication, please contact the 59 CRD/Publications and Presentations Section at 292-7141. This information is reported to the 59 MDW/CC. All medical research or technical information publications/presentations must be reported to the Defense Technical Information Center (DITC). See 59 MDWI 41-108, *Presentation and Publication of Medical and Technical Papers*, for additional information.

11. The Joint Ethics Regulation (JER) DoD 5500.07-R, *Standards of Conduct*, provides standards of ethical conduct for all DoD personnel and their interactions with other non-DoD entities, organizations, societies, conferences, etc. Part of the Form 3039 review and approval process includes a legal ethics review to address any potential conflicts related to DoD personnel participating in non-DoD sponsored conferences, professional meetings, publication/presentation disclosures to domestic and foreign audiences, DoD personnel accepting non-DoD contributions, awards, honoraria, gifts, etc. The specific circumstances for your presentation will determine whether a legal review is necessary. **If you (as the author) or your supervisor check "NO" in block 17 of the Form 3039, your research or technical documents will not be forwarded to the 502 ISG/JAC legal office for an ethics review.** To assist you in making this decision about whether to request a legal review, the following examples are provided as a guideline:

    For presentations before professional societies and like organizations, the 59 MDW Public Affairs Office (PAO) will provide the needed review to ensure proper disclaimers are included and the subject matter of the presentation does not create any cause for DoD concern.

    If the sponsor of a conference or meeting is a DoD entity, an ethics review of your presentation is not required, since the DoD entity is responsible to obtain all approvals for the event.

    If the sponsor of a conference or meeting is a non-DoD commercial entity or an entity seeking to do business with the government, then your presentation should have an ethics review.

    If your travel is being paid for (in whole or in part) by a non-Federal entity (someone other than the government), a legal ethics review is needed. These requests for legal review should come through the 59 MDW Gifts and Grants Office to 502 ISG/JAC.

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    If you (as the author) or your supervisor check "YES" in block 17 of the Form 3039, your research or technical documents will be forwarded simultaneously to the 502 ISG/JAC legal office and PAO for review to help reduce turn-around time. If you have any questions regarding legal reviews, please contact the legal office at (210) 671-5795/3365, DSN 473.

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement:
"The views expressed are those of the [author(s)] [presenter(s)] and do not reflect the official views or policy of the Department of Defense or its Components"

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"The experiments reported herein were conducted according to the principles set forth in the National Institute of Health Publication No. 80-23, Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966, as amended."

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

1. TO: CLINICAL RESEARCH	2. FROM: (Author's Name, Rank, Grade, Office Symbol)	3. GME/GHSE STUDENT:	4. PROTOCOL NUMBER:
	Gonzales, Michael, Capt, O-3, 44M1	☒ YES ☐ NO	C.2016.090d

5. PROTOCOL TITLE: (**NOTE:** For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.)

Frequency of Pulmonary Manifestations in Inflammatory Bowel Disease

6. TITLE OF MATERIAL TO BE PUBLISHED OR PRESENTED:

Incidence of Pulmonary Disease in Inflammatory Bowel Disease

7. FUNDING RECEIVED FOR THIS STUDY? ☐ YES ☒ NO FUNDING SOURCE:

8. DO YOU NEED FUNDING SUPPORT FOR PUBLICATION PURPOSES: ☐ YES ☒ NO

9. IS THIS MATERIAL CLASSIFIED? ☐ YES ☒ NO

10. IS THIS MATERIAL SUBJECT TO ANY LEGAL RESTRICTIONS FOR PUBLICATION OR PRESENTATION THROUGH A COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA), MATERIAL TRANSFER AGREEMENT (MTA), INTELLECTUAL PROPERTY RIGHTS AGREEMENT ETC.?
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CHECK APPROPRIATE BOX OR BOXES FOR APPROVAL WITH THIS REQUEST. ATTACH COPY OF MATERIAL TO BE PUBLISHED/PRESENTED.

☐ 11a. PUBLICATION/JOURNAL (List intended publication/journal.)

☐ 11b. PUBLISHED ABSTRACT (List intended journal.)

☒ 11c. POSTER (To be demonstrated at meeting: name of meeting, city, state, and date of meeting.)
National ACP, San Diego, CA March 30-April 1, 2017

☐ 11d. PLATFORM PRESENTATION (At civilian institutions: name of meeting, state, and date of meting.)

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12. HAVE YOUR ATTACHED RESEARCH/TECHNICAL MATERIALS BEEN PREVIOUSLY APPROVED TO BE PUBLISHED/PRESENTED?
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DATE	
March 23, 2017	

14. 59 MDW PRIMARY POINT OF CONTACT (Last Name, First Name, M.I., email)	15. DUTY PHONE/PAGER NUMBER
Glass, Kristen, R., kristen.r.glass.mil@mail.mil	210-916-3856

16. AUTHORSHIP AND CO-AUTHOR(S) List in the order they will appear in the manuscript.

LAST NAME, FIRST NAME AND M.I.	GRADE/RANK	SQUADRON/GROUP/OFFICE SYMBOL	INSTITUTION (If not 59 MDW)
a. Primary/Corresponding Author Gonzales, Michael A., MD	O-3/Capt.	959 CSPS	
b. McLaughlin, Cameron W., DO	O-3/Capt.	959 CSPS	
c. Skabelund, Andrew J. , MD	O-4/Major	959 CSPS	
d.			
e.			

17. IS A 502 ISG/JAC ETHICS REVIEW REQUIRED (JER DOD 5500.07-R)? ☒ YES ☐ NO

I CERTIFY ANY HUMAN OR ANIMAL RESEARCH RELATED STUDIES WERE APPROVED AND PERFORMED IN STRICT ACCORDANCE WITH 32 CFR 219, AFMAN 40-401_IP, AND 59 MDWI 41-108. I HAVE READ THE FINAL VERSION OF THE ATTACHED MATERIAL AND CERTIFY THAT IT IS AN ACCURATE MANUSCRIPT FOR PUBLICATION AND/OR PRESENTATION.

18. AUTHOR'S PRINTED NAME, RANK, GRADE	19. AUTHOR'S SIGNATURE	20. DATE
Michael Gonzales, Capt., O-3	GONZALES.MICHAEL.A.1404145319	February 28, 2017
21. APPROVING AUTHORITY'S PRINTED NAME, RANK, TITLE	**22. APPROVING AUTHORITY'S SIGNATURE**	**23. DATE**
Joshua S. Hawley-Molloy, LTC, Internal Medicine Residency Direct	HAWLEYMOLLOY.JOSHUA.STUART.1048078040	March 02, 2017

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

1st ENDORSEMENT (59 MDW/SGVU Use Only)

TO: Clinical Research Division 59 MDW/CRD Contact 292-7141 for email instructions.	24. DATE RECEIVED March 06, 2017	25. ASSIGNED PROCESSING REQUEST FILE NUMBER 17133

26. DATE REVIEWED	27. DATE FORWARDED TO 502 ISG/JAC
March 14, 2017	

28. AUTHOR CONTACTED FOR RECOMMENDED OR NECESSARY CHANGES: ☒ NO ☐ YES If yes, give date. _____ ☐ N/A

29. COMMENTS ☒ APPROVED ☐ DISAPPROVED

IRB approved research project presentation with appropriate disclaimers. Approved

30. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	31. REVIEWER SIGNATURE	32. DATE
Kevin Kupferer/GS 13/Human Research Subject Protection Expert	KUPFERER.KEVIN.R.1086667270	March 14, 2017

2nd ENDORSEMENT (502 ISG/JAC Use Only)

33. DATE RECEIVED	34. DATE FORWARDED TO 59 MDW/PA

35. COMMENTS ☐ APPROVED (In compliance with security and policy review directives.) ☐ DISAPPROVED

36. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	37. REVIEWER SIGNATURE	38. DATE

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39. DATE RECEIVED	40. DATE FORWARDED TO 59 MDW/SGVU
March 14, 2017	March 15, 2017

41. COMMENTS ☒ APPROVED (In compliance with security and policy review directives.) ☐ DISAPPROVED

42. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	43. REVIEWER SIGNATURE	44. DATE
Kevin Iinuma, SSgt/E-5, 59 MDW Public Affairs	IINUMA.KEVIN.MITSUGU.1296227613	March 15, 2017

4th ENDORSEMENT (59 MDW/SGVU Use Only)

45. DATE RECEIVED	46. SENIOR AUTHOR NOTIFIED BY PHONE OF APPROVAL OR DISAPPROVAL ☐ YES ☐ NO ☐ COULD NOT BE REACHED ☐ LEFT MESSAGE

47. COMMENTS ☐ APPROVED ☐ DISAPPROVED

48. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	49. REVIEWER SIGNATURE	50. DATE

Incidence of Pulmonary Disease in Inflammatory Bowel Disease

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Introduction The pulmonary manifestations of the inflammatory bowel disease (IBD) have been recognized for the last 40 years[1]. Early studies revealed an incidence of pulmonary manifestations of IBD of only 0.21%[2]. More recently, in a study of 36 IBD patients, Songur et al found that 44% of IBD patients have chronic respiratory symptoms; this was after exclusion of asthma, chronic gastroesophageal reflux, chronic bronchitis, and emphysema patients[3]. Multiple studies evaluated symptomatic and asymptomatic IBD patients and found abnormal pulmonary function tests (PFTs) in 28.5-58% and abnormal high resolution computed tomography (HRCT) in 22-64% of study participants[3-6].

Methods: This study is a retrospective chart review of patient records in AHLTA. A preliminary search conducted by BAMC Health Care Operations (HCO) has identified approximately 1521 Crohn's disease (CD) or ulcerative colitis (UC) patients (ICD-9 codes 556.xx and 555.xx) with inpatient and outpatient encounters over the past 5 years within DoD facilities in the San Antonio Multi-Market. This was used as the study group and was cross referenced by the SAMMC HCO for the ICD-9 codes of pulmonary diagnoses (See table 1). The prevalence of the various respiratory symptoms and diseases were then determined based on the results.

Results: A total of 1521 cases of IBD were found between 2010-2015. The prevalence of the various diagnoses are presented in table 1. A total of 525 unique patients(34.5%) were found to have ICD-9 codes associated with pulmonary symptoms or disease. Cough and dyspnea were the most common respiratory diagnoses associated with this population.

Discussion: The incidence of respiratory symptoms in the IBD population is not insignificant. 34.5% of IBD patients in this population were evaluated for respiratory complaints at some point during the 5 year study period. It is difficult to assess what the burden of chronicity is for the most common complaints of cough and dyspnea without performing a more in depth review of the medical records. Additionally, there was a high incidence of pneumonia, COPD, and venous thromboembolism in this population.

There is a high incidence of pulmonary symptoms in IBD patients. There are multiple potential explanations for this. Treatment of IBD typically requires immune suppression or surgery, both of which can place a patient at risk for pulmonary infections. IBD has been known to involve the large and small airways as well, and there is an apparent increased risk of this following colectomy in UC patients.

Of note, there were no diagnoses of asthma in our patient population, which is inconsistent with previously reported data, which noted that second only to arthritis, asthma was one of the most common chronic diseases in the IBD patient population.

A thorough chart review of our population is currently underway to assess the severity of the pulmonary symptoms in these patients. We hope to answer the question regarding the burden of chronicity of the respiratory diseases in these patients, in addition to answering the question whether asthma is as common in IBD as was previously thought.

Diagnosis	Patients	ICD-9 Codes	Percentage of total population
Alpha-1-antitrypsin def.	0	273.4	0.0
Asthma	0	493.xx	0.0
Bronchiectasis	9	494.0-1	0.6
Chronic Bronchitis	25	491.xx	1.6
COPD	63	496.xx	4.1
Cough	264	786.2	17.4
Dyspnea	279	786.0	18.3
Hemoptysis	8	786.30,786.39	0.5
Interstitial Lung Disease	2	516.xx	0.1
Pneumonia	136	480-486	8.9
Pulmonary Hypertension	0	416.0,416.8	0.0
Pulmonary Nodule	0	793.11,793.19	0.0
Pulmonary Vasculitis	5	447.6, 417.8	0.3
Venous Thromboembolism	52	415.1, 453.x	3.4
Wheezing	27	786.07	1.8
Sarcoidosis	6	135	0.4
Total unique patients	525		34.5

Table 1: Results of search for ICD-9 codes

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2. Desai SJ, Gephardt GN, Stoller JK. Diffuse panbronchiolitis preceding ulcerative colitis. *Chest.* 1989;95(6):1342-1344.
3. Songur N, Songur Y, Tuzun M, et al. Pulmonary function tests and high-resolution CT in the detection of pulmonary involvement in inflammatory bowel disease. *Journal of Clinical Gastroenterology.* 2003;37(4):292-298.
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Incidence of Pulmonary Disease in Inflammatory Bowel Disease

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Introduction

- The pulmonary manifestations of the inflammatory bowel disease (IBD) have been recognized for the last 40 years[1]
- Early studies revealed an incidence of pulmonary manifestations of IBD of only 0.21%[2].
- More recently, in a study of 36 IBD patients, Songur et al found that 44% of IBD patients have chronic respiratory symptoms[3]
- Multiple studies evaluated symptomatic and asymptomatic IBD patients and found abnormal pulmonary function tests (PFTs) in 28.5-58% and abnormal high resolution computed tomography (HRCT) in 22-64% of study participants[3-6].

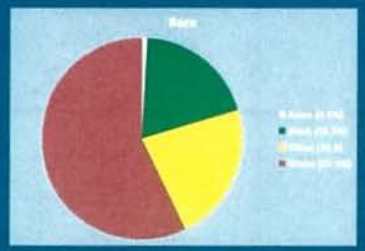
Methods

- Retrospective chart review of patient records in AHLTA (EMR). A preliminary search identified approximately 1521 Crohn's disease (CD) or ulcerative colitis (UC) patients .
- Cross referenced for the ICD-9 codes of pulmonary diagnoses
- The prevalence of the various respiratory symptoms and diseases were then determined based on the results.

Results

- Pulmonary symptoms
  - Over half evaluated for pulmonary symptoms
  - Cough and dyspnea most common
- Pulmonary medications
  - Increased SABA prescription
  - 14% using ICS
- Suggests undiagnosed disease
- Pulmonary function tests
  - Numerous abnormalities
  - Abnormal DLCO and TLC (>40%)
  - Mid-flows suggest small airway disease
- CT findings:
  - Pulmonary nodules—high prevalence
  - High prevalence of bronchiectasis and pleural disease

Age	49.4 (19-96)
Male	110 (51.2%)
Ulcerative Colitis	110 (51.2%)
Crohn's Disease	105 (48.8%)
Smoking History	51 (23.7%)



Spirometry Values (% predicted)	Mean ± SD
FVC	88.5 ± 16.7
FEV1	84.7 ± 19.7
FEV1/FVC	75.4 ± 10.4
FEF25-75	81.3 ± 34.0
TLC (N=21)	84.1 ± 22.7
DLCO (N=25)	70.8 ± 20.9

Spirometry Value	% Abnormal
FVC	20.4
FEV1	28.6
FEV1/FVC	4.0
FEF25-75	34.8
TLC	42.9
DLCO	44.0

Pulmonary Symptoms	N (%)
Cough	86 (40.0)
Dyspnea	50 (23.3)
Chest Pain	27 (12.6)
Wheezing	12 (5.6)

Pulmonary Diagnosis	N (%)
Asthma	23 (10.7)
COPD	12 (5.6)
Venous Thromboembolism	9 (4.2)
Restrictive Lung Disease	15 (7.0)
Pneumonia	26 (12.1)

Radiographic Finding	N (%)
Pulmonary Nodule	28 (46.7)
Ground Glass Opacity	6 (10.0)
Bronchiectasis	10 (16.7)
Emphysema	10 (16.7)
Mediastinal/Hilar Adenopathy	7 (11.7)
Interstitial Disease/Fibrosis	4 (6.7)
Pleural effusions or thickening	8 (13.3)

Pulmonary Medication	N (%)
Short-acting beta-agonists	93 (43.3)
Inhaled corticosteroid	30 (14.0)
Long-acting beta-agonists	19 (8.8)
Long-acting muscarinic antagonists	8 (3.4)

Conclusions

- Large, diverse retrospective chart review
- Preliminary data shows high prevalence of pulmonary disease
- High volume of PFTs and CT scans
- Future treatment of IBD patients

- Strengths
  - Large data pool for investigation of abnormal PFTs and CT findings
  - Chart review only 1/5 complete with 49 PFTs and 60 CTs analyzed
- Weaknesses
  - Misdiagnosis via ICD-9 code screening (37.7% exclusion rate)
  - Electronic searches

Next Steps

- Complete remaining chart review
- Incorporate abdominal CT findings
- Inflammatory markers
- GI medications

Resources

1. Kraft SC, et al. Unexplained bronchopulmonary disease with inflammatory bowel disease. *Archives of Internal Medicine* 1976;136(4):454-459.
2. Desai SJ, et al. Diffuse panbronchiolitis preceding ulcerative colitis. *Chest* 1989;95(6):1342-1344.
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